

CLAIMS

What is claimed is:

1. A method for minimizing code needed in a client to synchronize data records in the client with data records in a server system, comprising the steps of:

(a) creating setup information in the client, wherein the setup information enables the server system to identify the client and to provide appropriate commands for the client; and

(b) providing the setup information from the client to the server system to allow for synchronization of the data records.

2. The method of claim 1, wherein the client data records and the server system data records are stored in a respective client and server database, the method further including the steps of:

(c) detecting a changed record in the client database;

(d) dumping the changed record as it exists in the client database; and

(e) transmitting the changed record to the server system as it exists in the client database.

3. The method of claim 2, further comprising the steps of:

(f) processing the changed record by the server system;

(g) compiling a program by the server system to update the client database;

(h) transmitting the program to the client; and

(i) executing the program by the client, wherein the client database is
synchronized with the server database.

4. The method of claim 3, wherein the creating step (a) further includes providing
information that describes a format of the data records stored in the client database and a list
of commands executable by the client.

5. The method of claim 4, wherein the processing step (f) further includes:

(f1) retrieving a data record in the server database corresponding to the
changed record;

(f2) interpreting the changed record received from the client using the
setup information; and

(f3) updating the retrieved data from the server database.

6. The method of claim 3 further comprising the step of:

(j) resolving any conflicts between the changed record transmitted by the client
and the retrieved data.

7. The method of claim 5, wherein the setup information includes a header portion.

8. The method of claim 7, wherein the interpreting step (f2) further includes using
the header portion.

9. The method of claim 3, wherein the executing step (i) further comprises using an interpreter in the client.

5 10. The method of claim 3, wherein the compiling step (g) includes the step of providing object code compiled by the server system.

10 11. The method of claim 1, wherein the client data records and the server system data records are stored in a respective client and server database, and wherein the creating step (a) further includes providing information that describes a format of the data records stored in the client database and a list of commands executable by the client, the method further including the steps of:

- 15 (c) retrieving a changed record in the server database;
- (d) compiling a program by the server system, wherein the program is for updating the client database;
- (e) transmitting the program to the client; and
- (f) executing the program by the client, thereby synchronizing the client database and the server database.

20 12. The method of claim 1, wherein the client is a mobile client.

13. The method of claim 12, wherein the mobile client is one of a mobile phone, a

handheld computer, and a personal digital assistant.

14. A computer readable medium containing programming instructions for minimizing code needed in a client to synchronize data records in the client with data records in a server system, comprising the instructions for:

(a) creating setup information in the client, wherein the setup information enables the server system to identify the client and to provide appropriate commands for the client; and

(b) providing the setup information from the client to the server system to allow for synchronization of the data records.

15. The computer readable medium of claim 14, wherein the client data records and the server system data records are stored in a respective client and server database, further including the instructions for:

(c) detecting a changed record in the client database;

(d) dumping the changed record as it exists in the client database; and

(e) transmitting the changed record to the server system as it exists in the client database.

16. The computer readable medium of claim 15, further comprising the instructions for:

(f) processing the changed record by the server system;

- (g) compiling a program by the server system to update the client database;
- (h) transmitting the program to the client; and
- (i) executing the program by the client, wherein the client database is synchronized with the server database.

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17. The computer readable medium of claim 16, wherein the creating instruction (a) further includes providing information that describes a format of the data records stored in the client database and a list of commands executable by the client.

10 18. The computer readable medium of claim 17, wherein the processing instruction (f) further includes:

- (f1) retrieving a data record in the server database corresponding to the changed record;
- (f2) interpreting the changed record received from the client using the setup information; and
- (f3) updating the retrieved data from the server database.

15 19. The computer readable medium of claim 16 further comprising the instruction for:

20 (j) resolving any conflicts between the changed record transmitted by the client and the retrieved data.

20. The computer readable medium of claim 16, wherein the compiling instruction

(g) includes providing object code compiled by the server system.

21. A client computer system for synchronizing data records stored on the client computer system with data records stored on a server system, the client computer system comprising:

a database for storing the data records; and

a processor coupled to the database for creating setup information to the server system, wherein the setup information enables the server system to identify the client and to provide appropriate commands for the client.

22. The client computer system of claim 21, wherein the system further comprises means for detecting a changed record in the client database, and means for transmitting the changed record to the server system.

23. The client computer system of claim 22, wherein the processor further for executing a program compiled and transmitted by the server system, wherein the program updates and synchronizes the data records stored in the database.

24. The client computer system of claim 23 further comprising means for downloading and starting the program.

25. The client computer system of claim 21, wherein the client is one of a mobile

phone, a handheld computer, and a personal digital assistant.

26. A server system for synchronizing data records stored on the server system with data records stored in a client computer system, the server system comprising:

5 means for receiving setup information from the client computer system, wherein the setup information includes information to enable the server system to identify the client computer system and to provide appropriate commands for the client computer system;

memory for storing the setup information coupled to the means for receiving;

a processor coupled to the memory; and

10 a database coupled to the processor for storing the server system data records.

27. The server system of claim 26, further comprising means for receiving a changed data record from the client computer system;

15 wherein, the setup information further describes a format of the data records stored in the client computer system, and the processor interprets the changed data record from the client computer system using the setup information, updates the database, and compiles a program comprising object code executable by the client computer system to update the client data records.

20 28. The server system of claim 26 further comprising means for detecting a changed data record in the database;

wherein, the processor updates the database and compiles a program comprising

object code executable by the client computer system to update the client data records.

29. The server system of claim 28 further comprising means for transmitting the program to the client computer system.

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30. A method for synchronizing data records stored on a server system with data records stored in a client computer system while minimizing code needed on the client computer system, comprising the step of:

(a) receiving in the server system setup information from the client computer system, wherein the setup information includes information enabling the server system to identify the client computer system, and to provide appropriate commands for the client computer system.

31. The method of claim 30 further comprising the step of:

(b) processing in the server system a changed data record transmitted from the client computer system.

32. The method of claim 30 further comprising the steps of:

(b) compiling a program by the server system to update the data records stored in the client computer system; and

(c) transmitting the program to the client computer system for execution.

33. The method of claim 30, wherein the setup information further includes

information describing a format of the data records stored in the client computer system, and further comprising the steps of:

- (b) retrieving a data record in the server system corresponding to a changed record transmitted from the client computer system;
- (c) interpreting the changed record using the setup information; and
- (d) updating the retrieved data record.

34. The method of claim 32, wherein the compiling step (b) further includes providing object code executable by the client computer system.

35. The method of claim 30 further comprising the step of:

- (b) detecting a changed data record in the server system.

36. The method of claim 30, wherein the setup formation further includes information describing a format of the data records stored in the client computer system, further comprising the steps of:

(b) processing in the server system a changed data record transmitted from the client computer system, wherein the processing step (b) further includes:

- (b1) retrieving a data record in the server system corresponding to the changed record;
- (b2) interpreting the changed record using the setup information; and
- (b3) updating the retrieved data record;

(c) compiling a program by the server system to update the data records stored in the client computer system; and

(d) transmitting the program to the client computer system for execution.

5 37. A computer readable medium containing programming instructions for synchronizing data records stored on a server system with data records stored in a client computer system while minimizing code needed on the client computer system, comprising the instruction for:

10 (a) receiving in the server system setup information from the client computer system, wherein the setup information includes information enabling the server system to identify the client computer system, and to provide appropriate commands for the client computer system.

15 38. The computer readable medium of claim 37 further comprising the instruction for:

(b) processing in the server system a changed data record transmitted from the client computer system.

20 39. The computer readable medium of claim 37 further comprising the instructions for:

(b) compiling a program by the server system to update the data records stored in the client computer system; and

- (c) transmitting the program to the client computer system for execution.

40. The computer readable medium of claim 37, wherein the setup information further includes information describing a format of the data records stored in the client computer system, and further comprising the instructions for:

- (b) retrieving a data record in the server system corresponding to a changed record transmitted from the client computer system;
- (c) interpreting the changed record using the setup information; and
- (d) updating the retrieved data record.

41. The computer readable medium of claim 39, wherein the compiling instruction (b) further includes providing object code executable by the client computer system.

42. The computer readable medium of claim 37 further comprising the instruction for:

- (b) detecting a changed data record in the server system.

43. The computer readable medium of claim 37, wherein the setup information further includes information describing a format of the data records stored in the client computer system, further including the instructions for:

- (b) processing in the server system a changed data record transmitted from the client computer system, wherein the processing instruction (b) further includes:

